



Espacenet

Bibliographic data: JP 2007525956 (T)

NOVEL beta-ACTIN AND RPS21 PROMOTERS AND USES THEREOF

Publication date: 2007-09-13
Inventor(s):
Applicant(s):
Classification:
 - International: A01K67/027; A51K48/00; C07H21/04; C07K14/47; C07K16/22; C12N15/09; C12N15/79; C12N15/85; C12N5/06; C12N5/10; C12N9/02; C12N9/16; C12N9/24; C12P21/02; C12P21/08
 - European: A51K48/00D; C07K16/22
Application number: JP20060517171T 20040624
Priority number (s): US20030480768P 20030624; WO2004US17422 20040624
Also published as:
 • WO 2005000888 (A2)
 • WO 2005000888 (A3)
 • US 2005026252 (A1)
 • US 7423135 (B2)
 • US 2008301826 (A1)
 • more

Abstract not available for JP 2007525956 (T)

Abstract of corresponding document: WO 2005000888 (A2)

The invention relates to isolation of novel beta-actin and ribosomal protein S21 (rpS21) promoters and uses thereof. In particular, this invention features nucleotide sequences for rodent beta-actin promoters including, hamster, rat, and mouse, and hamster rpS21 promoter.

Last updated: 26/04/2011 Worldwide Database 5.7.22, 92p

(10) 日本国特許庁 (JP)

(12) 公表特許公報 (A)

(11) 特許出願公表番号

特表2007-525956

(P2007-525956A)

(43) 公表日 平成19年9月13日 (2007. 9. 13)

(51) Int. Cl.

F 1

ターマコード (参考)

C 1 2 N 15/00 (2006. 01)

C 1 2 N 15/00

Z N A A

4 B O 2 4

A O 1 K 67/027 (2006. 01)

A O 1 K 67/027

4 B O 5 0

C 1 2 N 9/16 (2006. 01)

C 1 2 N 9/16

D

4 B O 6 4

C 1 2 N 9/24 (2006. 01)

C 1 2 N 9/24

4 B O 6 5

C 1 2 P 21/02 (2006. 01)

C 1 2 P 21/02

C

審査請求 有 予備審査請求 未請求 (全 39 頁) 最終頁に続く

(21) 出願番号 特願2006-517171 (P2006-517171)

(71) 出願人 505187264

(86) (22) 出願日 平成16年6月24日 (2004. 6. 24)

ジェンザイム コーポレイション

(85) 翻訳文提出日 平成18年2月16日 (2006. 2. 16)

アメリカ合衆国 マサチューセッツ O 2

(86) 国際出願番号 PCT/US2004/017422

1 4 2, ケンブリッジ, ケンダル ス

(87) 国際公開番号 W02005/000988

トリート S O O

(87) 国際公開日 平成17年1月6日 (2005. 1. 6)

(74) 代理人 100102978

(31) 優先権主張番号 60/480, 768

弁理士 清水 初志

(32) 優先日 平成15年6月24日 (2003. 6. 24)

(74) 代理人 100128048

(33) 優先権主張国 米国 (US)

弁理士 新見 浩一

(72) 発明者 エステイス スコット ァー,

アメリカ合衆国 マサチューセッツ州 フ

レーミングハム ウィンチ ストリート

3 7

最終頁に続く

(54) 発明の名称 新規β-アクリンおよびR P S 2 1 プロモーター、ならびにこれらの使用方法

(57)

. 621. 4 pS21=

. 4 pS21=


```

. . . . .
. . . . . *15* = .....
. . . . .
. . . . .
. . . . . *18* = .....
. . . . .
. . . . . *1 = *6 = .....
. . . . .
. . . . . *28* = .....
. . . . .
. . . . . *38* = ..... *pSe* ..... 10
. . . . .
. . . . . *38* = .....
. . . . .
. . . . .
. . . . . *28* = .....
. . . . .
. . . . . *24* = ..... 20
. . . . .
. . . . . *25* = .....
. . . . .
. . . . . *23* *26* = .....
. . . . .
. . . . . *C80* = ..... *27* = .....
. . . . .
. . . . .
. . . . . *pSe* ..... 80
. . . . .
. . . . .
. . . . . *29* = .....
. . . . .
. . . . . *29* = .....
. . . . .
. . . . .
. . . . . *33* = ..... 40
. . . . .
. . . . . *22* = .....
. . . . .
. . . . . *33* = .....
. . . . .
. . . . . *ATCC* = ..... *PFA-5309* = .....
. . . . .
. . . . .
. . . . . *ATCC* = ..... *pSe* .....
. . . . .
. . . . .

```


[illegible]

[illegible]


```

.....[4].....[RNA].....[mgAL].....
.....
.....
.....
B. RNA = .....
[rNA] = [Promega] [Madison, WI] = [rNAgents] = [CMO-HI] = .....
.....
.....[5'] [rNA] [NorthernMax] = [Gly] = [Ambion, Austin, TX] = .....
.....[glycoxx].....
.....[rNA].....[Gehleicher & Schuell, Bassel, Germany]
.....[rER].....10
.....[GenBank].....[M96676] [nt 14-383] = .....
.....[Genbank].....[U20414] [nt 238-381] = [rF-1] [GenBank] = .....
.....[M80622] [nt 7-192] = [rPS21] [GenBank] = .....
.....[X79059] [nt 68-340] = [GenBank] = .....
[M99692] [nt 182-303] = .....[3] = .....
.....[rAPDH] = [Ambion, Austin, TX] = [rER] = .....
.....[rER].....
[1].....
.....
.....

```

20

遺伝子	プライマー	配列	配列番号:
β -アクチン	フォワード	GCTCTTCTCTCGCCGCTCC	8
β -アクチン	リバース	ACCACCTCCAGCTTCTCCC	9
EF-1	フォワード	GAACGCAGGTGTGTGAAAA	10
EF-1	リバース	CTCGGCAGCCTCCTTCT	11
rpS21	フォワード	GTGGACCTGTACGTGC	12
rpS21	リバース	TTCTCACTTTATTATTAGC	13
フェリチン	フォワード	CGCCAGAACTACCAACAGGAC	14
フェリチン	リバース	TTCAGAGCCACATCATCCG	15
ガレクチン	フォワード	TGGTCGCAAGCAACCTGAATC	16
ガレクチン	リバース	TTGAAGTCACCGTCTGGCGC	17

30

```

C. CH0-X1 . . . . . CH0-H1 . . . 10% . . . . . +FBS . . +Inv1
trogen . . . +25 . . . + . . . . . +lipofectamine . . . . .
. . . . . +Invitrogen . . . . . 50 . . 75% . . . . .
. . . . . +pBS4BD-1 . . . . . Clontech, Palo Alto, CA . . . . .
. . . . . +20 . . . . . +pSV40-CD . . . . .
20 . . . . . +pBS4BD-1 . . . . . +discosoma-str1 40
ata . . . . . +FP . . . . . +ACS . . . . .
. . . . . +Opti-MEM . . . . . +Invitrogen . . . 16 . . . . . +BFA . . . . .
. . . . . +8% . +FBS . . +25 . . . . . +8 . . . . .
. . . . .
. . . . .
D . . . . .
. +ACS . . . . . 1 . +0 . . . . . 2% . +BS . . . . .
. . . . . +8 . . . . . +FTC . . . . . +20 . . . +hermingen, San Diego,
CA . . . . . 2% . +BS . . . . . +BS . . . . . +ml . . . 50

```

50

[illegible]

存在量	タグ	遺伝子	配列番号:	同定
38	CATGGAAGCAGAAT	Alu 反復	19	J00052
33	CATGCAGGAGCTTC	Mito COX I	20	PCR
27	CATGGGGGAGCGTT	リボソームタンパク質S21	21	PCR
27	CATGGTACTGACAC	Mito COX III	22	PCR
20	CATGGCCTCCAAGG	GAPDH	23	X52123
20	CATGATAATACGTA	Mito ATPase 6	24	M14311
19	CATGCCCTTAAATCC	B-1 反復	25	PCR
18	CATGAATCGGAGGC	Mito シクロムB	26	J01436
18	CATGAGGCAGACAG	EF-1	27	D00522
18	CATGGCGGCAGACG	ガレクチン(L-14)	28	M98676
16	CATGGTGGCTCACA	Alu 反復	29	J00056
15	CATGTTGGCTGCCG	フェリチン重鎖	30	M99692
14	CATGCCCTGTGCCG	マッチなし	31	
13	CATGAGAGCGAAGT	リボソームタンパク質L41	32	X82550
13	CATGAGGAGGCCTA	ミトコンドリアNADH デヒドロゲナーゼ	33	PCR
12	CATGCCCTGAGTCC	β-アクチン	34	AF014363

10

20

40

50

[illegible]

```

* .....
* pDsRED-1* ..... Clontech* .....
* ..... CHO-K1* .....
* ..... AC6* .....
* .....
* .....
* nt=1970* nt=1037* ..... AVR=1* -3* .....
* ..... nt=6000* nt=1037* ..... AVR=1* -7* ..... AVR=1* -3* .....
* ..... 47kb* ..... AVR=6.5Kb* Sal=5.1Kb* ..... 3kb* .....
* ..... P=2.8kb* ..... AVR=1* -3* ..... 2%* 2%* 2% 10
* ..... 4%* .....
* .....
* ..... AVR=1* -3* ..... 1* .....
* AVR=1* 3* 6* ..... 680nt* ..... nt=2622* nt=1037* .....
* ..... 7* .....
* .....
* rps21* ..... DNA* .....
* ..... DNA* ..... PCR* .....
* フォワード:AGCTCTAATACGACTCACTATAGGGG (配列番号:40)
* .....
* リバーズ:CTCTAGGCCAGCGAGCGCAG (配列番号:41)
* .....
PCR* ..... pRED1* invitrogen* .....
* rps21* ..... 39* .....
* ..... EcorR* ..... pDsRED1-1* .....
Clontech* ..... 2kb* ..... rps21* ..... AVRCC* .....
* ..... American Tissue Culture Collection, P.O. Box 1549, Manassas, VA 20
108, U.S.A. 200* .....
* .....
* ..... 3* ..... CMV* ..... 30
* AVR=1* -3* ..... CMV* ..... invitrogen* ..... BF-
1* ..... Invitrogen* .....
* .....
* CHO-K1* ..... RFP* ..... AVR=1* -3* 64A* .....
* ..... BF=1* ..... pDsRED1* .....
* ..... RFP* ..... 48* ..... AC6* .....
* .....
* .....
* 7A* ..... AVR=1* -3* .....
* ..... 1* ..... CMV* ..... BF=1* ..... 40* .....
* ..... RFP* ..... CMV* ..... AVR=1* -3* .....
2* .....
* .....
* .....
* ..... CHO-K1* ..... 44* ..... 2*
* ..... RFP* ..... 74* .....
* ..... RFP* ..... AVR=1* -3* .....
* ..... 1* .....
* .....
* .....

```

[illegible]

10

細胞株	CMV プロモーター	β -アクトシン-プロモーター
BHK-21	8.3 \pm 0.4	121 \pm 99.8
HEK293	139 \pm 9.9	102 \pm 8.3

[illegible]

プール	20 nM MTXでの ASMの発現	200 nM MTXでの ASMの発現
CMV-ASM プールA	4.3	8.2
CMV-ASM プールB	16.9	9.5
CMV-ASM プールC	3.6	3.7
β -アクチン-ASM プールA	33.5	100.0
β -アクチン-ASM プールB	59.3	27.9
β -アクチン-ASM プールC	45.6	90.5

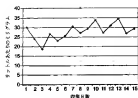
10

ベクター	GAA 発現 <2 pg/細胞/hr	GAA 発現 2-5 pg/細胞/hr	GAA 発現 5-8 pg/細胞/hr	GAA 発現 8-10 pg/細胞/hr
pGZ3IC-GAA	16%	50%	26%	8%
nGZ6IC-GAA	52%	34%	14%	0%

プール	ASM nU/細胞/24 hr (20 nM MTX) の発現	ASM nU/細胞/24 hr (200nM MTX) の発現
rpS21-ASM プールA	12	34
rpS21-ASM プールB	13	30
rpS21-ASM プールC	16	41

プール	ASM発現
CMV-ASM プールA	38
CMV-ASM プールB	193
CMV-ASM プールC	44
β -アクチン-ASM プールA	381
β -アクチン-ASM プールB	125
β -アクチン-ASM プールC	515
rpS21-ASM プールA	342
rpS21-ASM プールB	60
rpS21-ASM プールC	51

.....



.....

2007525956000001.xml

.....

..... (2006.2.28)

.....

.....

.....

.....

.....

.....

.....

.....

*フォワード:AGCTCTAATACGACTCACTATAGGGC (配列番号 :40)

*

* リバース:CTCTAGGCCAGCGGAGCGCAG (配列番号 :41)

..

PCR.....

.....

.....

Clontech.....

PTA-6194.....

20108, U.S.A. 2005.....

.....

.....

.....

* * * * *

INTERNATIONAL SEARCH REPORT

Index application No.
PCT/US2004/017422

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/79 C12N15/85 C12N5/10 A01K67/027

According to International Patent Classification (IPC) or to both national classification and IPC

B. PUBLIS BRANCHED

Minimum document number (classification system followed by classification symbol)

IPC 7 C12N A01K

Document(s) selected other than minimum document(s) to the extent that such document(s) are included in the fields searched

Electronic data base consulted during the international search (name of data base used, where practical, search bases used)

EP0-Internal, Sequence Search, BIOSIS, MPI Gats, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indications, where appropriate, of the relevant passages	Relevant to claim No.
X	BEDDINGTON R S P ET AL: "AN IN SITU TRANSGENIC ENZYME MARKER FOR THE MIOGESTATION HOUSE EMBRYO AND VISUALIZATION OF INNER CELL MASS CLONES DURING EARLY ORGANOGENESIS" DEVELOPMENT, COMPANY OF BIOLOGISTS, CAMBRIDGE., GB, vol. 106, no. 1, 1989, pages 37-46,2, XP001088884 ISSN: 0950-1991	1-10,13, 20,21
Y	page 38, column 1 - column 2; figure 1 -/-	1-21,35

☒ Further documents are listed in the continuation of item C.

☐ Patent family members are listed in annex.

* Special categories of cited documents:

A document containing the general state of the art which is not considered to be of particular relevance

P earlier document that published on or after the international filing date

L document which may have priority claims or priority claims or which is cited to establish the publication date of another claim or other special reason (see specification)

O document relating to an oral disclosure, use, exhibition or other practice

D document published prior to the international filing date but later than the priority date claimed

P later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principles or theory underlying the invention

O document of particular relevance; the claimed invention cannot be considered novel or claimed as considered to involve an inventive step when the document is taken alone

P document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, each considered as being obvious to a person skilled in the art

A document member of the same patent family

Date of actual completion of the international search

29 December 2004

Date of mailing of the international search report

29.03.05

Name and mailing address of the ISA

European Patent Office, P.O. Box 5010, Luxembourg II
NL - 2000 HV Rijswijk
Tel. (+31-70) 945-2000, Telex 6011 epara,
Fax (+31-70) 945-2019

Authorized officer

Habit, H

INTERNATIONAL SEARCH REPORT

Int. nat. application No.
PCT/US2004/017422**Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(b) for the following reasons:

1. ☐ **Claims Nos.:**
because they relate to subject matter not required to be searched by the Authority, namely:
2. ☐ **Claims Nos.:**
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be conducted, specifically:
3. ☐ **Claims Nos.:**
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claim Nos.:

1-21, 35

Remarks on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

International Application No. PCT/US2004/017422

FURTHER INFORMATION CONTINUED FROM PCTISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-21, 35

an isolated rodent beta actin promoter chosen from nucleotide sequences set forth in SEQ ID N°1, 2, and 3, or a variant thereof having promoter activity, and subject-matter related thereon

2. claims: 22-34, 36

an isolated rp521 promoter having the nucleotide sequence set forth in SEQ ID N°39 and subject-matter related thereon

INTERNATIONAL SEARCH REPORT

 Date of publication file
 PCT/US2004/017422

C:(continuation) DOCUMENTS COMBINED TO THE RELEVANT

Category *	Character of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BREITBART A S ET AL: "Gene-enhanced tissue engineering: applications for wound healing using cultured dermal fibroblasts transduced retrovirally with the PDGF-B gene." ANNALS OF PLASTIC SURGERY, DEC 1999, vol. 43, no. 6, December 1999 (1999-12), pages 632-639, XP009042066 ISSN: 0148-7043	1-11,13
Y	page 635, column 2, paragraph 3; figure 1	1-21,35
Y	MUDEL U ET AL: "The nucleotide sequence of the rat cytoplasmic beta-actin gene." NUCLEIC ACIDS RESEARCH, 25 MAR 1983, vol. 11, no. 6, 25 March 1983 (1983-03-25), pages 1759-1771, XP002312115 ISSN: 0305-1048	1-21,35
Y	page 1764- = page 1765; figure 2 -A DATABASE EMBL EBI; 13 July 1983 (1983-07-13), MUDEL U ET AL.: "The nucleotide sequence of the rat cytoplasmic beta-actin gene" XP002312127 retrieved from EBI Database accession no. V01217 the whole document	1-21,35
Y	DATABASE EMBL EBI; 21 April 1995 (1995-04-21), STAHLBOM PA AND FRANZEN SA: "Isolation and characterization of the beta actin gene from chinese hamster" XP002312117 retrieved from EBI Database accession no. U20114 the whole document	1-21,35
Y	ELDER P K ET AL: "EVIDENCE THAT THE FUNCTIONAL BETA ACTIN GENE IS SINGLE COPY IN MOST MICE AND IS ASSOCIATED WITH 5' SEQUENCES CAPABLE OF CONFERRING SERUM AND CYCLOHEXIMIDE-DEPENDENT REGULATION" MOLECULAR AND CELLULAR BIOLOGY, vol. 8, no. 1, 1988, pages 480-485, XP002312116 ISSN: 0270-7306 page 480, column 2 - page 481, column 1	1-21,35

-/-

INTERNATIONAL SEARCH REPORT

Inventor publication No.
PCT/US2004/017422

Category 1: Documents considered to be relevant

Category 1	Character of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KIM TEGAN ET AL: "Gene transfer in bovine blastocysts using replication-defective retroviral vectors packaged with gibbon ape leukemia virus envelopes" MOLECULAR REPRODUCTION AND DEVELOPMENT, vol. 35, no. 2, 1993, pages 105-113, XP009042067 ISSN: 1040-452X page 106, column 2, last paragraph - page 108, column 2, paragraph 2; table 2	1-21,35
A	NAKAJIMA-IJIMA S ET AL: "MOLECULAR STRUCTURE OF THE HUMAN CYTOPLASMIC BETA ACTIN GENE INTERSPECIES HOMOLOGUE OF SEQUENCES IN THE INTRONS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol. 82, no. 18, 1985, pages 6133-6137, XP002332177 ISSN: 0027-8424	

.....

(51) Int. Cl.

.....

.....	21/08	(2006.01)	21/08
.....	5/10	(2006.01)	5/00

(81) * * * * * AP(BW, BH, GM, KE, LS, MW, NZ, NA, SD, SI, SZ, TZ, UC, ZM, ZW), BA(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), EP(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OA(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG), AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(72) * * * * *

.....

* * * * * (****)*4B024 AA20 BA11 BA12 BAB0 CA04 CA20 DA02 EA04 GA11 HA14

* * * * **4B050 CC03

* * * * **4B064 AG01 AG27 CA10 CA19 CC24

* * * * **4B065 AA90X AB01 AC14 BA02 CA24 CA25 CA31